

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising:

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~~a storage, operable to rewritably store tone correction information;~~

a tone correction section for receiving input tone level data ~~with regard to~~ based on a color system of the coloring agent, and for applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data ~~corrected by the tone correction, the tone correction being applied with reference to the tone correction information; and~~

a half-toning section for applying a half-toning with respect to the output tone level data to generate the half-tone data,

wherein the tone correction is based on gamma characteristics, of the image forming apparatus, having a value resolution higher than a value resolution of the input tone level data.

2. (Original) The image forming apparatus as set forth in claim 1, wherein the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

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54.00 DP
258.00 DP

3. (Currently Amended) The image forming apparatus as set forth in claim 1, further comprising:

a correction information generating section for measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus, ~~and for generating tone correction for rewriting the tone correction information stored in the storage.~~

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4. (Original) The image forming apparatus as set forth in claim 3, wherein the correction information generating section generates the tone correction information from the optical density of the test image by calculation.

5. (Original) The image forming apparatus as set forth in claim 3, wherein the half-tone data is generated such that a bit number thereof assigned to one pixel of one color in the test printing operation is greater than that in a usual printing operation for printing an image to be appreciated.


6. (Original) The image forming apparatus as set forth in claim 3, wherein the half-toning section applies the half-toning with a screen method using different screens in the test printing operation and in a usual printing operation for printing an image to be appreciated, and

wherein the screen frequency of the screen used in the test printing operation is greater than that used in the usual printing operation.

7. through 9. (Cancelled)

10. (Currently Amended) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

~~storing tone correction information rewritably in a storage;~~

 obtaining input tone level data ~~with regard to~~ based on a color system of the coloring agent;

applying, ~~with reference to the tone correction information,~~ a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data;

applying a half-toning with respect to the output tone level data to generate the half-tone data,


wherein the tone correction is based on gamma characteristics, of the image forming apparatus, having a value resolution higher than a value resolution of the input tone level data.

11. (Original) The image forming method as set forth in claim 10, wherein the tone correction is applied such that the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

12. (Currently Amended) The image forming method as set forth in claim 10, further comprising ~~the steps~~ a step of:

measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus; ~~and~~

~~generating tone correction information for rewriting the tone correction information stored in the storage.~~

 13. (Original) The image forming method as set forth in claim 12, wherein the tone correction information is generated from the optical density of the test image by calculation.


14. (Original) The image forming method as set forth in claim 12, wherein the half-tone data is generated such that a bit number thereof assigned to one pixel of one color in the test printing operation is greater than that in a usual printing operation for printing an image to be appreciated.

15. (Original) The image forming method as set forth in claim 12, wherein the half-toning is applied with a screen method using different screens in the test printing operation and in a usual printing operation for printing an image to be appreciated, and

wherein the screen frequency of the screen used in the test printing operation is greater than that used in the usual printing operation.

16. through 18. (Cancelled)

19. (Currently Amended) A computer-readable recording medium for recording a program causing a computer to execute an image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

 ~~storing tone correction information rewritably in a storage;~~

obtaining input tone level data ~~with regard to~~ based on a color system of the coloring agent;

applying, ~~with reference to the tone correction information,~~ a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data;

applying a half-toning with respect to the output tone level data to generate the half-tone data,

wherein the tone correction is based on gamma characteristics, of the image forming apparatus, having a value resolution higher than a value resolution of the input tone level data..

20. (Original) The computer-readable recording medium as set forth in claim 19, wherein the tone correction is applied such that the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

21. (Currently Amended) The computer-readable recording medium as set forth in claim 20, the image forming method executed by the program further comprising ~~the steps~~ a step of:
measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus, ~~and~~
~~generating tone correction information for rewriting the tone correction information stored in the storage.~~

22. (Original) The image forming method as set forth in claim 21, wherein the tone correction information is generated from the optical density of the test image by calculation.

23. (Previously Presented) The image forming apparatus as set forth in claim 1, wherein the input tone level data and output tone level data are CMYK data.

24. (Previously Presented) The image forming apparatus as set forth in claim 1, wherein the gamma characteristic variation results from ambient atmospheric conditions or aging.

25. (Previously Presented) The image forming apparatus as set forth in claim 1, wherein the tone correction for compensating gamma characteristic variation of the image forming device is determined by comparing actual gamma characteristics of the image forming device with ideal gamma characteristics of the image forming device and performing a determination calculation.

26. (Previously Presented) The image forming apparatus as set forth in claim 3, wherein the test image is comprised of all kinds of toners of CMYK and contains many different tone levels.

27. (Previously Presented) The image forming method as set forth in claim 10, wherein the input tone level data and output tone level data are CMYK data.

28. (Previously Presented) The image forming method as set forth in claim 10, wherein the gamma characteristic variation results from ambient atmospheric conditions or aging.

29. (Previously Presented) The image forming method as set forth in claim 10, wherein the tone correction for compensating gamma characteristic variation of the image forming device is determined by comparing actual gamma characteristics of the image forming device with ideal gamma characteristics of the image forming device and performing a determination calculation.

30. (Previously Presented) The image forming method as set forth in claim 12, wherein the test image is comprised of all kinds of toners of CMYK and contains many different tone levels.

31. (Previously Presented) The computer-readable recording medium as set forth in claim 19, wherein the input tone level data and output tone level data are CMYK data.

32. (Previously Presented) The computer-readable recording medium as set forth in claim 19, wherein the gamma characteristic variation results from ambient atmospheric conditions or aging.

33. (Previously Presented) The computer-readable recording medium as set forth in claim 19, wherein the tone correction for compensating gamma characteristic variation of the image forming device is determined by comparing actual gamma characteristics of the image forming device with ideal gamma characteristics of the image forming device and performing a determination calculation.

34. (Previously Presented) The computer-readable recording medium as set forth in claim 21, wherein the test image is comprised of all kinds of toners of CMYK and contains many different tone levels.


35. (Previously Presented) An image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising:

a tone correction section for receiving input tone level data with regard to a color system of the coloring agent, and for applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data corrected by the tone correction; and

a half-toning section for applying a half-toning with respect to the output tone level data to generate the half-tone data,

wherein the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

36. (Previously Presented) An image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising:

 a tone correction section for receiving input tone level data with regard to a color system of the coloring agent, and for applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data corrected by the tone correction;


a half-toning section for applying a half-toning with respect to the output tone level data to generate the half-tone data; and

a correction information generating section for measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus, and for generating tone correction information to be utilized by the tone correction section,

wherein the half-tone data is generated such that a bit number thereof assigned to one pixel of one color in the test printing operation is greater than that in a usual printing operation for printing an image to be appreciated.

37. (Previously Presented) An image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising:

a tone correction section for receiving input tone level data with regard to a color system of the coloring agent, and for applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data corrected by the tone correction;

 a half-toning section for applying a half-toning with respect to the output tone level data to generate the half-tone data; and

a correction information generating section for measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus, and for generating tone correction information to be utilized by the tone correction section, wherein:

the half-toning section applies the half-toning with a screen method using different screens in the test printing operation and in a usual printing operation for printing an image to be appreciated, and

the screen frequency of the screen used in the test printing operation is greater than that used in the usual printing operation.

38. (Previously Presented) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

obtaining input tone level data with regard to color system of the coloring agent;

applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data; and

applying a half-toning with respect to the output tone level data to generate the half-tone data,

wherein the tone correction is applied such that the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

39. (Previously Presented) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

obtaining input tone level data with regard to color system of the coloring agent;

applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data;

applying a half-toning with respect to the output tone level data to generate the half-tone data

measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus; and

generating tone correction information to be utilized in the step of applying the tone correction.

wherein the half-tone data is generated such that a bit number thereof assigned to one pixel of one color in the test printing operation is greater than that in a usual printing operation for printing an image to be appreciated.

40. (Previously Presented) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

b1 obtaining input tone level data with regard to color system of the coloring agent;
applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data;
applying a half-toning with respect to the output tone level data to generate the half-tone data.

measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus; and

generating tone correction information to be utilized in the step of applying the tone correction, wherein:

the half-toning is applied with a screen method using different screens in the test printing operation and in a usual printing operation for printing an image to be appreciated, and

the screen frequency of the screen used in the test printing operation is greater than that used in the usual printing operation.

41. (Previously Presented) A computer-readable recording medium for recording a program causing a computer to execute an image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising the steps of:

obtaining input tone level data with regard to color system of the coloring agent;

applying a tone correction for compensating gamma characteristic variation of the image forming device with respect to the input tone level data to generate output tone level data;

applying a half-toning with respect to the output tone level data to generate the half-tone data,

wherein the tone correction is applied such that the number of tone levels contained by the output tone level data is greater than that of the input tone level data.

42. (Previously Presented) The computer-readable recording medium as set forth in claim 41, the image forming method executed by the program further comprising the steps of:

measuring an optical density of a test image printed in a test printing operation to obtain the gamma characteristics of the image forming apparatus, and

generating tone correction information to be utilized in the step of applying the tone correction.

43. (Previously Presented) The image forming method as set forth in claim 42, wherein the tone correction information is generated from the optical density of the test image by calculation.

44. (New) An image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising:

a correction information generating section for generating tone correction information for compensating gamma characteristic variation of the image forming device, the tone correction information having a first value resolution;

a tone correction section for receiving input tone level data based on a color system of the coloring agent and having a second value resolution, and for applying the tone correction information with respect to the input tone level data,

wherein the first value resolution is higher than the second value resolution.

45. (New) An image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising steps of:

receiving input tone level data based on a color system of the coloring agent and having a first value resolution;

generating tone correction information for compensating gamma characteristic variation of the image forming device, the tone correction information having a second value resolution higher than the first value resolution; and

applying the tone correction information with respect to the input tone level data.

46. (New) A computer-readable recording medium for recording a program causing a computer to execute an image forming method applied to an image forming apparatus for forming an image based on half-tone data with a coloring agent, comprising steps of:

receiving input tone level data based on a color system of the coloring agent and having a first value resolution;

generating tone correction information for compensating gamma characteristic variation of the image forming device, the tone correction information having a second value resolution higher than the first value resolution; and

applying the tone correction information with respect to the input tone level data.